
CLASSIFICATION AND MAPPING OF THE LOWER ORDOVICIAN IN KENTUCKY.*

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The paper presented the results of the operations of the New Kentucky Geological Survey as they relate to the Lower Ordovician.

Highbridge is accepted from the Richmond Folio as a saits-facotry name for the "Kentucky River Limestones" known in the Old Kentucky Survey Reports as Chazy and Birdseye. Camp Nelson, Oregon and Tyrone are proposed as names for what were formerly known as Chazy, Kentucky River Marble, and Birdseye Proper respectively. Lexington is also accepted from the Richmond Folio, and is divided in ascending order into Curdsville, Logana, Wilmore, Paris and Perryville, the latter being Linney's "Upper Birdseye."

Flannagan Chert of the Richmond Folio, as the name for a persistent horizon, is dropped. It has been found to truncate beds lying in and just above the Upper Paris where there have been brought to the surface under the influence of slow atmospheric weathering.

Near the summit of the culminating point of the Cincinnati Anticline in Central Kentucky (Jessamine Dome) this horizon is marked by an abundance of phosphate, in some cases rich enough to invite an attempt to exploit for commercial purposes. This deposit is identified as the geological equivalent of the Mt. Pleasant Phosphate of Tenn.

Winchester is accepted from the Folio referred to above, as the name for the formation coming next above the Lexington, and an attempt is made to assign to it more definite limits than heretofore. A wave marked crinoidal limestone, carrying in northern situations *Trinucleus concentricus*, is taken as the upper limit of the Winchester. The fauna of the Winchester is found to possess strong Cincinnati affinities and is accordingly

* Abstract of paper read Dec. 2, Cincinnati, Ohio St. Acad. of Sci.

grouped in with this division of the Ordovician as its basal member.

Eden is accepted from Orton's Report on the Lower Silurian published in Vol. I of the Ohio Geological Survey 1873, as the name for the 250 feet of shale series which surmounts the Winchester. Southward it is found to be thinner, aggregating perhaps 200 feet and with a well pronounced sandstone ("Siliceous Mudstone" of the older Kentucky Survey Reports) in the upper part. The name Garrard is retained from the Richmond Folio for this portion, and Million, a name proposed by Foerste, is accepted for the remainder. The Eden is found to be a very widespread formation in Central Kentucky, with its outcrop everywhere marked by the same topographic features. It distends into very steep slopes, which, under the influence of cultivation soon wash bare of soil.

As regards economic features: The Highbridge yields excellent building stones. The Lexington is traversed by lead and zinc mineral veins, which have as their most common gangue, barite, shows phosphate and furnishes soil which is the "Blue Grass" par excellence. The Winchester furnishes grazing lands scarcely inferior. The Eden, however, is found to furnish soils which wear out rapidly under the influence of cultivation, and its outcrop is found to mark a poor strip of country between areas that are rich.
